



NATIONAL TRANSPORTATION SAFETY BOARD

**Office of Aviation Safety
Western Pacific Region**

NOSE GEAR MODIFICATION INFORMATION

**NTSB Accident: WPR14LA179
Accident Date: April 30, 2014**

This document contains 4 embedded images (courtesy Mr. Greg Smith)

A. ACCIDENT

Location: Bremerton, WA
Date: April 30, 2014
Aircraft: Pulsar XP, N452PC, Serial # 452
NTSB IIC: Michael Huhn

B. SUMMARY

On April 30, 2014, about 1055 Pacific daylight time, an experimental amateur-built Pulsar XP, N452PC, sustained substantial damage on landing at Bremerton National airport (PWT), Bremerton, Washington. Examination revealed that the pivot shaft to enable the nose landing gear (NLG) wheel and tire assembly to caster for directional control had failed in reversed bending fatigue, which allowed the NLG fork to depart the airplane during takeoff.

According to the builder/owner/pilot, the nose gear design was modified by some Pulsar owners due to multiple failures. An acquaintance of the pilot sent an email a brief description of the changes plus with four photographs; all are included below. The accident airplane incorporated the original nose gear design.

Email Text:

"The pictures I am sending show a failed gear, a drawing of a design that was modified to use a bolt instead of a machined shaft, and pictures of finished product. The key has been to use a good certified welder that can assure the 4130 is cut and machined correctly. The two guys that designed this are engineers and ran the load analysis."

C. FORWARDED IMAGES



Figure 1 - Fractured Shaft

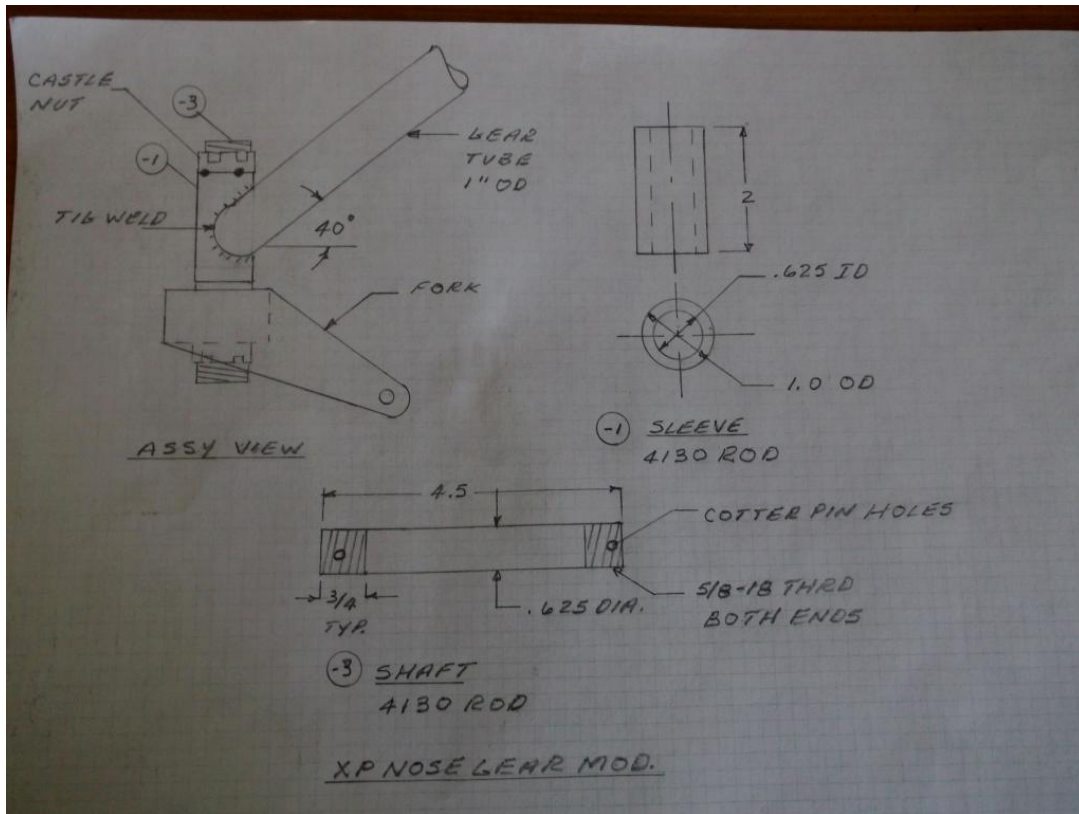


Figure 2 - New Design



Figure 3 – New Design Gear Leg Lower End



Figure 4 - Fully Assembled New Design